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The Effect of Psychiatric Rehabilitation on the Activity and Participation Level of Clients with Long-Term Psychiatric Disabilities

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ABSTRACT: During the last decades of the 20th century, many psychiatric hospitals changed the living environments of their clients with long-term psychiatric disabilities. We investigated the effect of this environmental psychiatric rehabilitation and normalization process on the activity and participation level of such clients residing in one Dutch psychiatric hospital. The seven years of panel research demonstrated that more normal living environments have a positive effect on clients' activity and participation level. This is controlled for the fact that younger clients, and clients with a relative high activity and participation level were selected for these normal living environments.

KEY WORDS: psychiatric rehabilitation; activity and participation level; psychiatric hospital; normalization.

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INTRODUCTION

The living environment of clients with long-term psychiatric disabilities residing in psychiatric hospitals has undergone extensive transformation during the last decades. The transfer of care from psychiatric hospitals to district-based services and the renewal of hospital buildings has been characterized by the words rehabilitation and normalization. However, only limited research has been conducted on the effect of these transformations. There is no consensus about the variables that should be taken into account for studying this normalization process. Many different research outcome measures have been used for this purpose. Because of this diversity of outcome measures, it is not possible to draw reliable conclusions. It seems, however, that more normal living environments *do not* influence clients' psychopathology, and *do* strongly improve clients' reported quality of life. The effect of more normal living environments on clients' activity and participation level appears to be positive. The diversity of outcome measures is not the only problem that needs to be mentioned. Final conclusions have also been difficult to draw due to the fact that it is the highest functioning clients who have always been selected for more normal living environments. Clients with relatively many disabilities remain (longer) in a psychiatric hospital. Also older clients tend to stay in the hospital (Dickerson, 1997; Leff and Trieman, 2000; Kruzich and Kruzich, 1985; Nelson et al., 1998; O'Driscoll, 1993; Thornicroft and Bebbington, 1989).

Our study, conducted in the Netherlands, focuses on the effect of psychiatric rehabilitation (particularly: a more normal living environment) on clients' activity and participation level. We controlled for the selection of clients who were being moved to more normal living environments. We also controlled for clients' previous activity and participation level, for clients' characteristics, and for clients' diagnoses.

First we will describe the two key variables 'activity and participation' and '(more) normal living environment.' Subsequently, we will propose a definition for psychiatric rehabilitation and illustrate that the key variables are crucial in psychiatric rehabilitation theory. Finally, we will present and test a theoretical psychiatric rehabilitation model.

Activity and Participation Level

The words activity and participation are in accordance with the International classification of functioning, disability and health (World Health Organization, 2001), that provides a standard language and framework

for the description of health and health related states. 'Functioning' is divided into two components. The first component 'body functions and body structures' are the physiological and psychological functions of body systems, and the anatomical parts of the body. The second component 'activity and participation' relates to the individual execution of a task or action, and to involvement in a life situation.

Psychiatric treatment is primarily focused on ameliorating impairments of body functions and body structures, and on '*sickness reduction*.' Psychiatric rehabilitation is primarily focused on increasing activity and participation, and on '*health induction*.' Psychiatric rehabilitation does not neglect the issue of impairment, but considers impairment in terms of its role as a possible obstacle to clients' activity and participation.

The Living Environment

In order to gain a more systematic understanding of the normalization grade associated with one's living environment, we employed a typology for living environments in our research. The typology consists of three grades. The higher the grade, the greater the degree of normalization. Grade 1 environments were the closed units located on the hospital grounds, with relatively large groups of (11 or more) clients. Grade 2 environments were open settings on the hospital grounds. Most of the time, relatively large groups (6 to 10, and 11 or more clients) resided here. Also, more than one staff member occupied each shift. Grade 3 environments were small-scale (5 or less clients) open units located outside the hospital grounds. Normally, one staff member worked each shift.

Within each environmental grade, the degree of normalization could differ to some extent. Those differences in normalization grade can be important. For instance: a closed section on the grounds of the psychiatric hospital, housing large groups of clients, with restrictive rules, and without private bedrooms, is less normal than a closed section on the grounds of the psychiatric hospital with small client groups, fewer general rules, and with a separate bedroom for each client. However, our research only focused on three living environments: grade 1, grade 2 and grade 3.

Psychiatric Rehabilitation

Different interpretations of psychiatric rehabilitation exist (Barton, 1999). It is important to reach some level of agreement regarding how

best to view this concept. We propose a definition of psychiatric rehabilitation that views it as a mental health service. In this service, psychiatric rehabilitation is focused on clients' activity and participation relating to living, working, learning, leisure time and social contact: *Psychiatric rehabilitation is a process that combines client-focused services with environment-focused services, with the intention to increase clients' activity and participation level as much as possible, and to use clients' capabilities as much as possible in a social context that is as normal as possible.*

The focus on the component 'activity and participation', and the emphasis on clients' capabilities, points to the differences between psychiatric treatment and psychiatric rehabilitation.

Psychiatric rehabilitation can be divided into two approaches. The first, American, approach (Anthony et al., 2002) emphasizes client-focused, skills oriented services, while the second, English, approach (Shepherd, 1984; Watts and Bennett, 1991) emphasizes environmental prostheses-focused services. In our opinion, it is essential that, in addition to providing environmental prostheses, the environmental psychiatric rehabilitation (English) approach simultaneously facilitates the client-focused skills oriented psychiatric rehabilitation (American) approach as much as possible. The difference between the English and American psychiatric rehabilitation approach is a gradual one. For instance, a classical large-scale psychiatric hospital environment does not pay much attention to individual variety and preferences. On the other hand, a more normal, small-scale living environment stimulates clients to choose, get and keep their individual goals and coaches them to acquire the skills needed to reach these goals. Therefore, English environmental psychiatric rehabilitation also has an individual skills related aim. In our view, this is where the two approaches overlap.

Our research focuses on the English approach: 'environmental psychiatric rehabilitation.' We consider environmental psychiatric rehabilitation in terms of a mental health care service that strives to create living environments that are as normal as possible, with the intention of increasing to the greatest extent possible clients' activity and participation level. We focused on the effect of environmental psychiatric rehabilitation (particularly normal living environments) on clients' activity and participation level.

Our study is based on a secondary analysis of already existing data obtained from panel research consisting of three measurements (T1, T2 and T3), spread over seven years. It focused on clients in one Dutch psychiatric hospital that normalized the living environments during the

period of study. Between 1992 and 1997, all of the living environments associated with this hospital underwent extensive transformation. Of all the clients with long-term psychiatric disabilities that resided in this hospital, only 1% was located in small-scale open units outside the hospital grounds at T1 and T2. After the transformation of the living environments (at T3), this became the living environment for 34% of the clients. The percentage of these clients residing in a closed living environment decreased from 44% at T1 to 27% at T3.

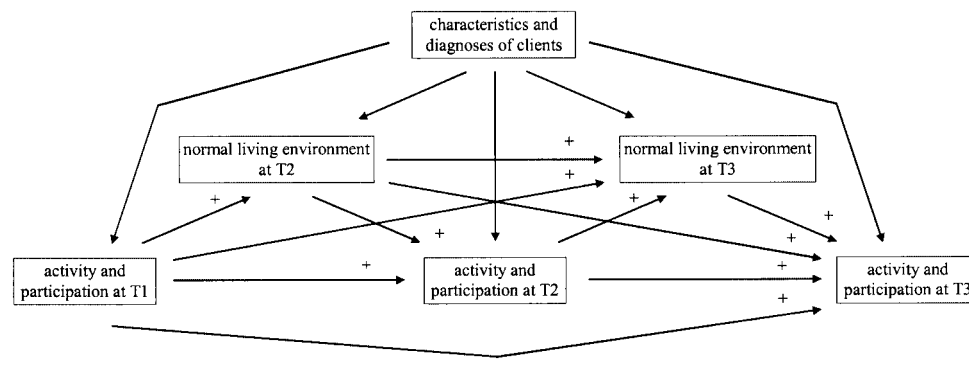
The analysis was conducted relating to: 1) living environment; 2) activity and participation level of clients resided in this psychiatric hospital; and 3) clients' characteristics and diagnoses.

Research Questions

The goal of our study was to explore the factors that determine the activity and participation level of clients that reside in a psychiatric hospital. For this purpose we developed a new model: the theoretical environmental psychiatric rehabilitation model. Part of this model focuses on the relationship between, on the one hand, environmental psychiatric rehabilitation (particularly normal living environments), and, on the other hand, clients' activity and participation level. In our analysis of this relationship we controlled for the selection of clients that moved to more normal living environments (see Figure 1).

FIGURE 1

Theoretical Environmental Psychiatric Rehabilitation Model



There were three key research questions:

1. To what extent is the theoretical environmental psychiatric rehabilitation model supported by the data?
2. Are there factors that determine the activity and participation level at T3 of clients that reside in a psychiatric hospital?
3. If so, how much explanatory power regarding these clients' activity and participation level is provided by:
 - environmental psychiatric rehabilitation, particularly the normal living environments at T2 and at T3;
 - one's activity and participation level at T1 and at T2;
 - the clients' characteristics at T3; and
 - the clients' diagnoses at T3?

In our analysis of these determinants we controlled for the selection of clients that were moved to more normal living environments.

METHOD

This study utilizes a panel research design with three measurements: T1, T2 and T3. Data collection at T1 took place in the middle of 1989, while the T2 data collection took place in the middle of 1991. The living environments in the psychiatric hospital studied in this research underwent extensive transformation between T2 and T3: renovations, as well as new buildings, and residences outside the grounds of the hospital were used for the hospital's clients. The T3 data collection occurred one year after the clients had moved into the new or renovated buildings. Therefore, the duration between T2 and T3 differed per client. The average time differential was 5.4 years ($sd = 1.1$).

The three measurements pertain to clients that resided in the long-term facilities of the psychiatric hospital. The data set consists of 129 clients who were measured three times. These clients can be considered to be representative of the 12,000 clients that reside in long-term facilities in Dutch mental hospitals: schizophrenia is the main diagnosis for 45.5% of the clients, 66.7% reside in a psychiatric hospital for a period longer than 10 years, and 51.5% is female. Because of the follow-up design, there is a slight overrepresentation of older clients: the average age at T1 was 60 years ($sd = 13$).

The 'Questionnaire functioning level' (Van Wel, 2002) measures the activity and participation level of each client. This questionnaire was filled out by a staff member who was familiar with the daily functioning of a specific client for at least half a year. The questionnaire took approximately 15 minutes to fill out and could be done without previous training. Factor analytic research uncovered one factor: activity and participation level. This factor consists of 37 items and is characterized by a high level of internal validity and high reliability (Cronbach's $\alpha = .88$). Each item can be scored in three ways: score 2 = good functioning; score 1 = some disabilities; and score 0 = many disabilities, concerning the item. This overall scale can be divided into seven separate factors: internal social integration (e.g., 'helps other clients'), basic self support ('needs support to get dressed'), use of the media ('reads newspapers'), having contacts with persons from outside the hospital without going outside the hospital grounds ('receives visitors

from outside the hospital'), leaving the grounds of the hospital ('shops outside the hospital grounds'), potential social skills ('is able to use the telephone'), and peaceful contact ('threatens other people'). The questionnaire is an easy to use and sensitive instrument when measuring small differences in activity and participation level among clients. It is also useful for measuring developments across time, as they relate to activity and participation level changes within a single client.

RESULTS

Multivariate analyses revealed that clients' characteristics and diagnoses did not predict activity and participation level, nor did they predict being selected for a more normal living environment. The only exception to this pattern was age: age is an important predictor for activity and participation level, and for being selected for a more normal living environment. For this reason we decided to place age into our theoretical environmental psychiatric rehabilitation model, instead of 'characteristics and diagnoses of clients.'

We tested the model presented in Figure 1 (where clients' characteristics and diagnoses were replaced by 'age') by using structural equation modelling (SEM). SEM provides insight to whether empirical correlations can be explained by a theory. A test of the individual relationships between variables, as done in classical regression analyses, is exceeded by SEM due to the fact that it tests the total model of the relationships (Jöreskog and Sörbom, 1999). The results are shown in Figure 2. The direct, indirect and total effects are presented in Tables 1 and 2.

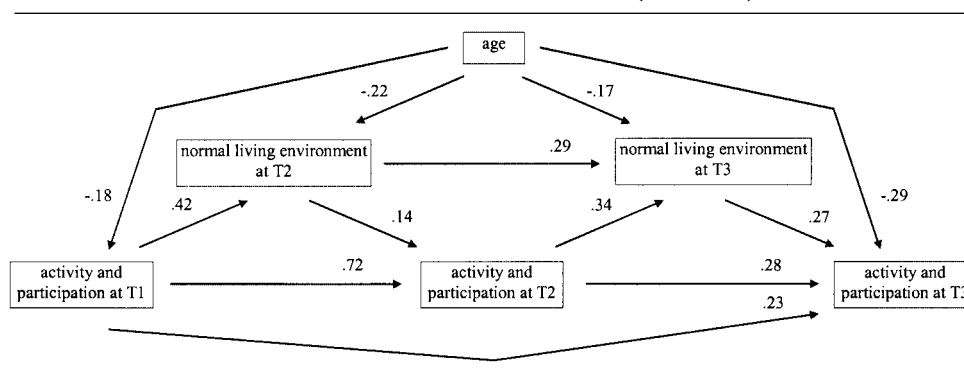
The model presented in Figure 2 fits well with the data (chi square/df ratio = 1.1; p of chi square = .35; Root Mean Square Error of Approximation (RMSEA) = .03; Adjusted Goodness of Fit Index (AGFI) = .94).

The clients who were moved at T3 to small-scale houses outside the hospital grounds (grade 3) were characterized by a higher activity and participation level than the clients who stayed on the hospital grounds (grade 1 and grade 2). This difference in activity and participation level between the two groups of clients already existed before the changes took place in the hospital's living environments (at T2). We conclude that a client's activity and participation level is a strong predictor of being selected for more normal living environments.

There are multiple factors that determined the activity and participation level of clients at T3 ($R^2 = .62$). Environmental psychiatric rehabilitation, particularly normal living environments at T3, had a direct effect on clients' activity and participation level at T3 (the direct effect is .27). Also, the following three variables had a direct effect on clients' activity

FIGURE 2

**Empirical Environmental Psychiatric Rehabilitation Model
with Standardized Effects (n = 129)**



and participation level at T3: (1) one's activity and participation level at T1 (with a direct effect of $.23$): the higher one's activity and participation level at T1, the higher one's activity and participation level at T3; (2) one's activity and participation level at T2 (with a direct effect of $.28$): the higher one's activity and participation level at T2, the higher one's activity and participation level at T3; (3) one's age (with a direct effect of $-.29$): the younger an individual was, the higher his/her activity and participation level was at T3. Besides age, no other demographic variables had a significant effect; this was also the case for clients' diagnoses.

Controlling for the fact that mainly younger clients, and clients characterized by a higher activity and participation level, tend to be placed in more normal living environments, this research shows that normal living environments have a positive effect on clients' activity and participation level.

DISCUSSION

The most important finding of our research is that more normal living environments are directly linked with higher activity and participation level. Until now, it was not possible to draw this conclusion due to the fact that the highest functioning clients were selected for less supervised

TABLE 1

Direct, Indirect and Total Standardized Effects of Age, Activity and Participation at T1 and T2, Normal Living Environment at T2 and T3; on the Activity and Participation at T1, T2, and T3, Including R²

	Activity and Participation at T1 ($R^2 = .03$)			Activity and Participation at T2 ($R^2 = .63$)			Activity and Participation at T3 ($R^2 = .62$)		
	Direct	Indirect	Total	Direct	Indirect	Total	Direct	Indirect	Total
Age	-.18		-.18		-.17	-.17	-.29	-.17	-.47
Activity and participation at T1									
Activity and participation at T2				.72	.06	.78	.23	.32	.55
Normal living environment at T2							.28	.09	.37
Normal living environment at T3				.14		.14		.13	.13
							.27		.27

TABLE 2

Direct, Indirect and Total Standardized Effects of Age, Activity and Participation at T1 and T2, Normal Living Environment at T2; on Normal Living Environment at T2, and at T3, Including R^2

	<i>Normal Living Environment at T2 ($R^2 = .25$)</i>			<i>Normal Living Environment at T3 ($R^2 = .37$)</i>		
	<i>Direct</i>	<i>Indirect</i>	<i>Total</i>	<i>Direct</i>	<i>Indirect</i>	<i>Total</i>
Age	-.22	-.08	-.30	-.17	-.15	-.31
Activity and participation at T1	.42		.42		.39	.39
Activity and participation at T2				.34		.34
Normal living environment at T2				.29	.05	.34

living environments (Leff and Trieman, 2000: 222). SEM makes it possible to control for this selection. It is also necessary to control for clients' age. As has been mentioned, a higher age is correlated with staying in larger homes (ibid.). The empirical environmental psychiatric rehabilitation model demonstrates the relative importance of the selection process, of clients' age, and of the living environment on clients' activity and participation level.

Although clients' activity and participation level is the main outcome measure for psychiatric rehabilitation, it provides us with a limited perspective. One should realize that clients' activity and participation level is not necessarily connected to other important variables such as psychiatric symptoms or clients' satisfaction with the living environment.

The 37-item questionnaire is characterized by a good factor structure and high reliability. However, there exists no consensus in the literature regarding which specific variables should be measured, and the relative

importance of these (Dickerson, 1997). The World Health Organization Disability Assessment Schedule II might provide some answers to this question (Epping-Jordan and Bedirhan Üstün, 2000).

Environmental (English) psychiatric rehabilitation increases clients' activity and participation level. Dutch research indicates that the client-focused (American) psychiatric rehabilitation is also probably effective in increasing clients' activity and participation level (Van Busschbach and Wiersma, 2002; Swildens et al., 2001). It is plausible that these two psychiatric rehabilitation approaches influence each other positively.

Because psychiatric rehabilitation promotes an increase in clients' activity and participation level, and psychiatric treatment ameliorates clients' level of impairment, psychiatry gains more power to influence the different components of psychiatric clients' functioning.

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